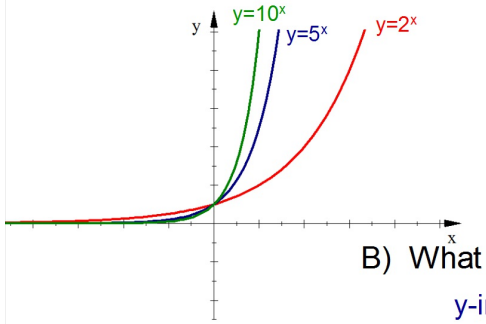
1. (a) $y = a \cdot b^x$ is the **general form** for an Exponential Equation

(b) What are the allowed values for

x :	a :	b :
Any Real Number	$a \neq 0$	$b > 0, b \neq 1$

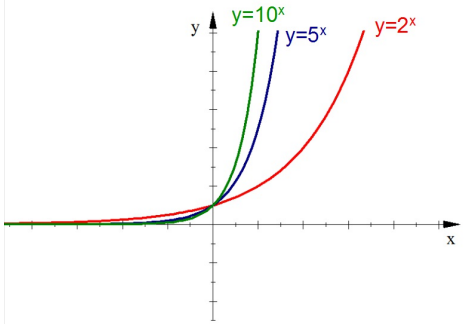
When b>1 the graph represents Exponential Growth.

b is called the Growth Factor



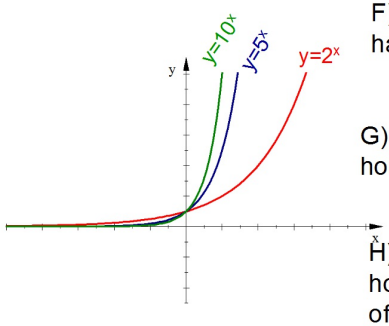
B) What is the y-intercept?

y-int = 1



E.

As b gets larger the graph increases/grows faster ("steeper")



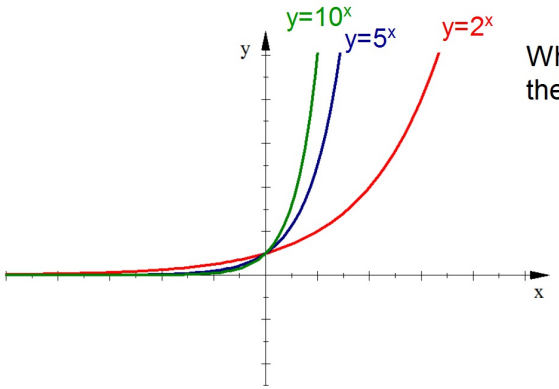
F) What point do all three graphs have in common?

same y-int: y=1

G) All three graphs have the same horizontal asymptote which is

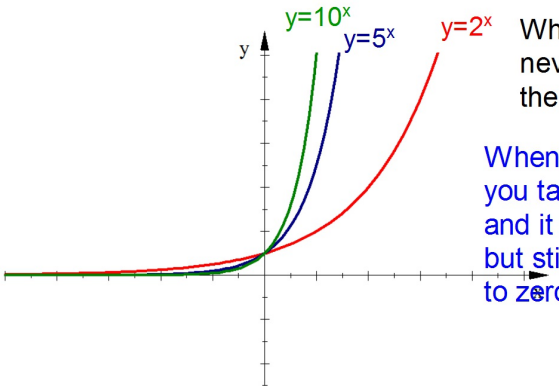
y = 0 (x-axis)

H) The graphs approach this horizontal asymptote as the values of x Decreases



Why do they all have the same y-intercept?

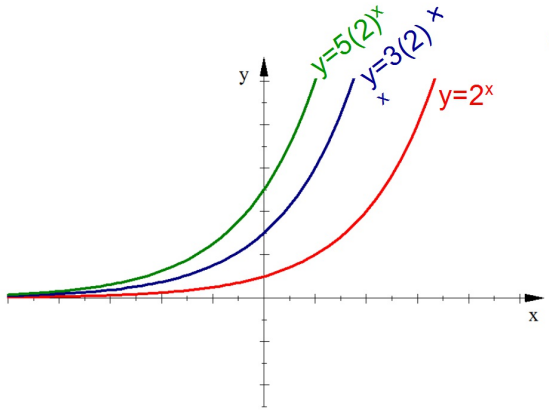
You find the y-int by replacing x with zero and when you do this all three equations equal 1.



Why will these graphs never reach or cross the x-axis?

When x becomes bigger negative you take the reciprocal of the base and it becomes a smaller number, but still positive. It gets closer to zero but never equals zero.

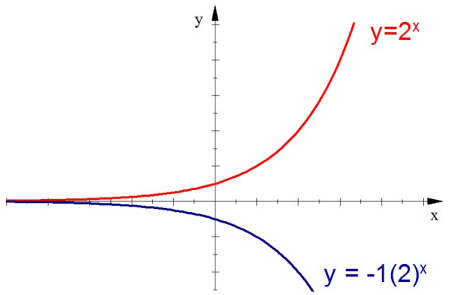
C. What does a do to the graph?



a changes the y-intercept

in fact a
IS the y-intercept

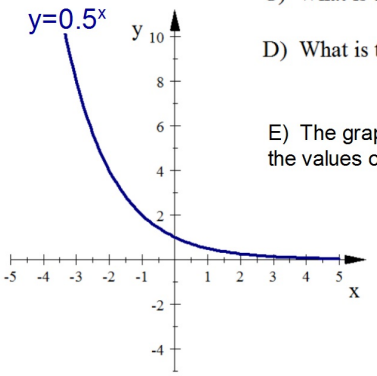
D. What does a negative value of a do to the graph?



x-axis reflection
Upside Down

When 0<b<1 the graph represents Exponential Decay.

b is called the Decay Factor



C) What is the y-intercept? y-int = 1

D) What is the horizontal asymptote?

y = 0 (x-axis)

E) The graph approaches this horizontal asymptote as the values of x Increase